

5. Install new cotter pins through all ball joint studs. Spread the cotter pin arms to lock them in place.
6. Check the toe-in adjustment as described in *Toe-in Adjustment* in Chapter Three. If the tie rod ends were replaced, their locknuts will be tightened during the adjustment procedure.

STEERING KNUCKLE

Removal/Installation

Refer to **Figure 32**.

NOTE

In this procedure, illustrations depict a four-wheel drive model. The only major difference between the two-wheel and four-wheel drive versions is the presence of the front drive axle and other minor items that are unique to the four-wheel drive system. Where differences occur that relate to the procedure, they are identified.

1. Remove the front hub as described in this chapter.
2. Remove the boot protector (**Figure 33**).
3. Detach the brake vent hose and brake hose from the mounting brackets on the upper suspension arm.

CAUTION

It is not necessary to disconnect the brake hose in Step 3. Do not allow the brake panel to hang from the brake hose.

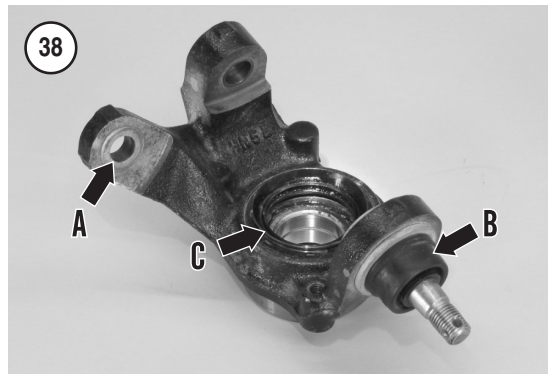
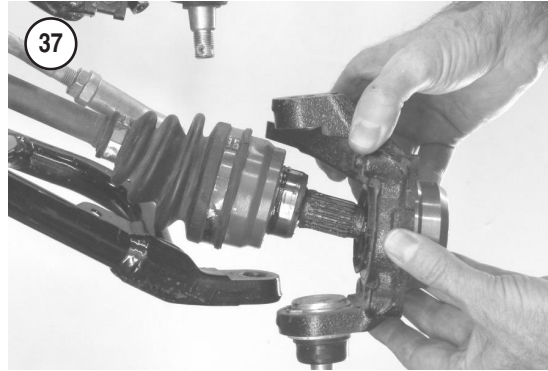
4. Remove the brake panel (Chapter Thirteen) and hang the panel so it is out of the way.
5. Disconnect the tie rod from the steering knuckle as described in this chapter.
6. Remove the cotter pins and nuts (**Figure 34**) from the upper and lower control arm ball joints.
7. Disconnect the upper and lower control arm ball joints using the Honda ball joint remover (part No. 07MAC-SL00200 [**Figure 35**]) or an equivalent. Perform the following:

CAUTION

Do not strike the ball joint or its stud when removing it; otherwise, the ball joint may be damaged.

- a. Mount the ball joint remover between the ball joint upper arm as shown in **Figure 36**.

- b. Operate the tool and break the upper ball joint loose from the upper arm.
- c. Repeat for the lower control arm.
- 8A. On two-wheel drives, remove the steering knuckle.
- 8B. On four-wheel drives, remove the steering knuckle (**Figure 37**) while being careful not to damage the axle splines or boots.
- 9. Inspect the steering knuckle as described in this chapter.
- 10. Install the steering knuckle by reversing these removal steps, plus the following:
 - a. On four-wheel drives, lubricate the steering knuckle seal lips with a waterproof grease, then insert the axle into the steering knuckle (**Figure 37**).
 - b. Install the steering knuckle onto the upper and lower control arms. Install the ball joint nuts and tighten them to 29 N•m (22 ft.-lb.).
 - c. Install new cotter pins and bend the ends over completely.
 - d. Check front brake operation before riding the ATV.
 - e. Install the brake hose clamps and tighten them to 12 N•m (106 in.-lb.).

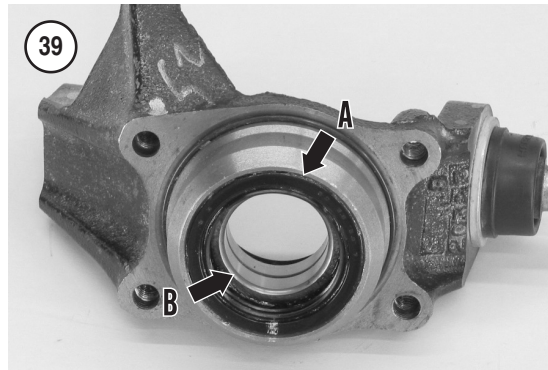


Inspection

CAUTION

When cleaning the steering knuckle, do not wash the ball joint in solvent. The ball joint cover may be damaged or the grease may be contaminated.

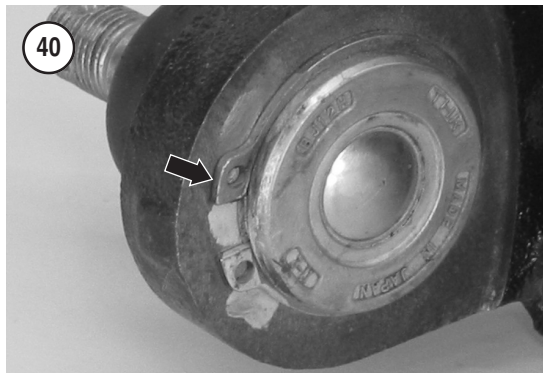
1. Clean and dry the steering knuckle assembly (**Figure 38**).
2. Inspect the steering knuckle and replace it if it is damaged.
3. Examine the holes (A, **Figure 38**) where the tie rod and upper control arm attach. Check for elongation and fractures.
4. Inspect the ball joint and rubber boot (B, **Figure 38**). Pivot the ball joint by hand. It should move freely. The ball joint is permanently packed with grease. If the rubber boot is damaged, dirt and moisture can enter the ball joint and damage it. If the ball joint or boot is damaged, replace the steering knuckle assembly. The ball joint is not available separately.
5. Check the hole at the end of the ball joint where the cotter pin fits. Make sure there are no fractures or cracks leading out toward the end of the ball



joint. If any are present, replace the steering knuckle.

6A. On four-wheel drive models, perform the following:

- a. Check the inner (C, **Figure 38**) and outer (A, **Figure 39**) dust seals for wear or damage. If necessary, replace the seals as described in this section.
- b. Turn the inner and outer bearings (B, **Figure 39**) by hand. Both bearing races should turn freely and without any sign of roughness,

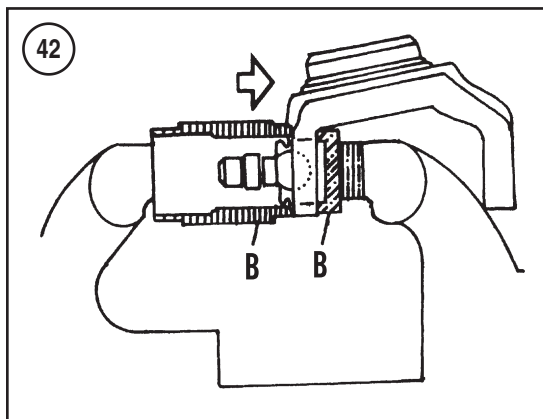
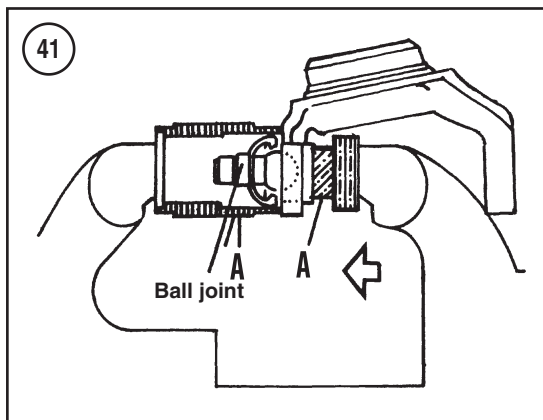


- b. Examine the cotter pin hole in the end of the spindle. Replace the steering knuckle if it is fractured or cracked.

Lower Ball Joint Replacement

CAUTION

Ball joint removal and installation require special tools. Do not try to replace the ball joints without these tools as the steering knuckle may be damaged.



catching or excessive noise. Replace the damaged bearings as described in this section.

6B. On two-wheel drive models, perform the following:

- a. Inspect the spindle portion where the front wheel bearings ride for wear or damage. If the spindle is damaged in any way, replace the steering knuckle.

1. Remove the snap ring (**Figure 40**) securing the lower ball joint to the steering knuckle.
2. Position the special tools (Honda part No. 07JMF-HC50110) or equivalents, with the A mark facing the ball joint and install the special tools and the steering knuckle in a vise (**Figure 41**).
3. Slowly tighten the vise and press the ball joint out of the steering knuckle.
4. Remove the special tools, steering knuckle and ball joint from the vise.
5. Clean the ball joint receptacle in the steering knuckle with solvent and thoroughly dry it.
6. Correctly position the new ball joint in the steering knuckle and use the same special tools used for removal. Position the special tools with the B mark facing toward the ball joint.
7. Install the special tools and the steering knuckle in a vise (**Figure 42**).

CAUTION

While tightening the vise, if there is a strong resistance or if the vise stops moving, stop immediately. There probably is an alignment problem with either the ball joint or the special tool. Realign the ball joint and special tools and try again. The ball joint should press in with a minimum amount of resistance.

8. Slowly tighten the vise and press the ball joint straight into the steering knuckle. Press the ball joint in until it bottoms.
9. Remove the special tools and the steering knuckle from the vise.
10. Make sure the snap ring groove is completely visible in order to accept the snap ring. Press the ball joint in farther if necessary.
11. Install the snap ring so the flat side is out. Make sure the snap ring seats correctly.

Steering Knuckle Dust Seal and Bearing Replacement (Four-Wheel Drive)

Refer to **Figure 43**.

1. Remove the inner (C, **Figure 38**) and outer (A, **Figure 39**) dust seals. Discard both dust seals.

NOTE

When only replacing the dust seals, go to Step 10.

2. Remove the snap ring (4, **Figure 43**).
3. Support the steering knuckle and press or drive out the bearing.
4. If the bearing was a loose fit in the steering knuckle, check the bearing bore for cracks or severe wear.
5. Clean the bearing bore.
6. Check the snap ring groove for cracks or other damage.
7. Pack the new bearing with grease.
8. Press or drive the new bearing into the steering knuckle. Press or drive against the marked side of the bearing. Force the bearing in until it is fully seated. See *Bearings* in Chapter One for bearing installation information.
9. Install a new snap ring (4, **Figure 43**) with the flat side out. Make sure it seats in the groove completely.
10. Install the dust seals as follows:
 - a. Pack the lip of each dust seal with grease.
 - b. Install both dust seals with the closed side facing out.
 - c. Press both dust seals into the steering knuckle.

CONTROL ARMS

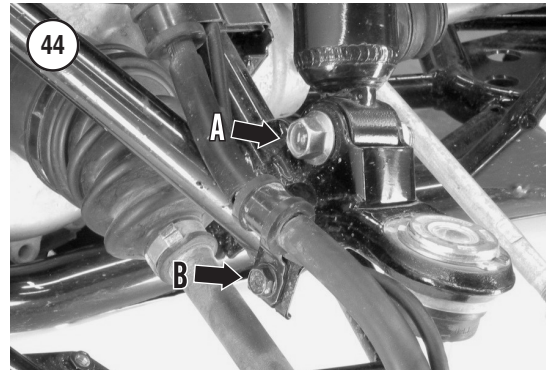
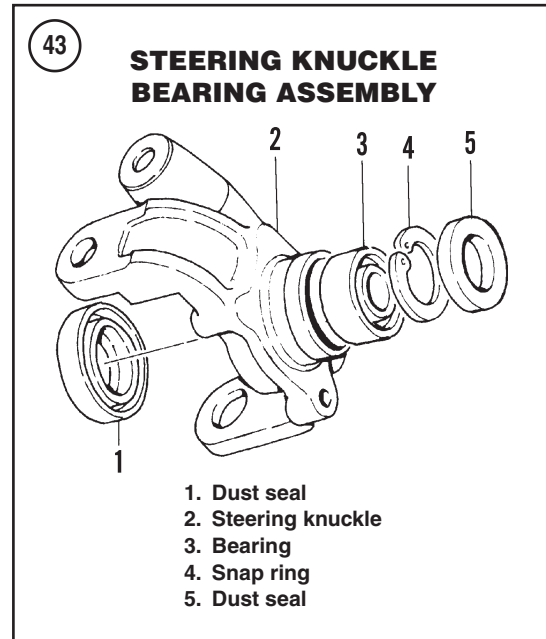
Refer to **Figure 32**.

Removal/Installation

NOTE

In this procedure, illustrations depict a four-wheel drive model. The only major difference between the two-wheel and four-wheel drive versions is the presence of the front drive axle and other minor items that are unique to the four-wheel drive system. Where differences occur that relate to the procedure, they are identified.

1. Remove the steering knuckle as described in this chapter.



2. Remove the upper control arm as follows:
 - a. Remove the locknut and bolt (A, **Figure 44**) securing the shock absorber to the upper control arm.
 - b. Remove the brake hose and breather tube clamp bolt (B, **Figure 44**) from the upper control arm.
 - c. Remove locknuts and bolts and the upper control arm (A, **Figure 45**).
3. Remove the locknuts and bolts and the lower control arm (B, **Figure 45**).
4. Discard all of the control arm and lower shock absorber locknuts removed in Step 2 and Step 3.
5. Inspect the upper and lower control arms as described in this section.

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